



# Uptime anytime

**MAN Energy Solutions**  
Future in the making



# Market Overview

Focus on GenSets

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Two Stroke Business  
Day, Month, Year



# Market Overview – Focus on GenSets

GenSet Campaign, Athens – June 2019

- 1 Mega trends to navigate
- 2 Market Forecast
- 3 Market in Greece – Survey on GenSets



# 1 Mega trends to navigate

# Our journey from port of departure to port of call

## Mega-trends to navigate

ROBOTICS  
and AI

BIO FUELS

ZERO ENERGY  
WASTE

CRADLE-TO-GRAVE  
PERSPECTIVE OF  
LIFECYCLE

POPULATION  
GROWTH

R.I.P. FOSSIL  
FUELS †

ECO SYSTEM  
LEGISLATION:  
LAND + SEA

TRANSPARENCY and TRACEABILITY

CIRCULAR ECONOMY:  
reuse-recycle

CORPORATE  
STRATEGY:  
solutions, main  
engine, hybrid

HERDING BEHAVIOR  
– THE POLITICAL  
CONSUMER

CHANGING  
TRADE ROUTES

TECHNOLOGICAL  
QUANTUM LEAPS

# MAN Energy Solutions

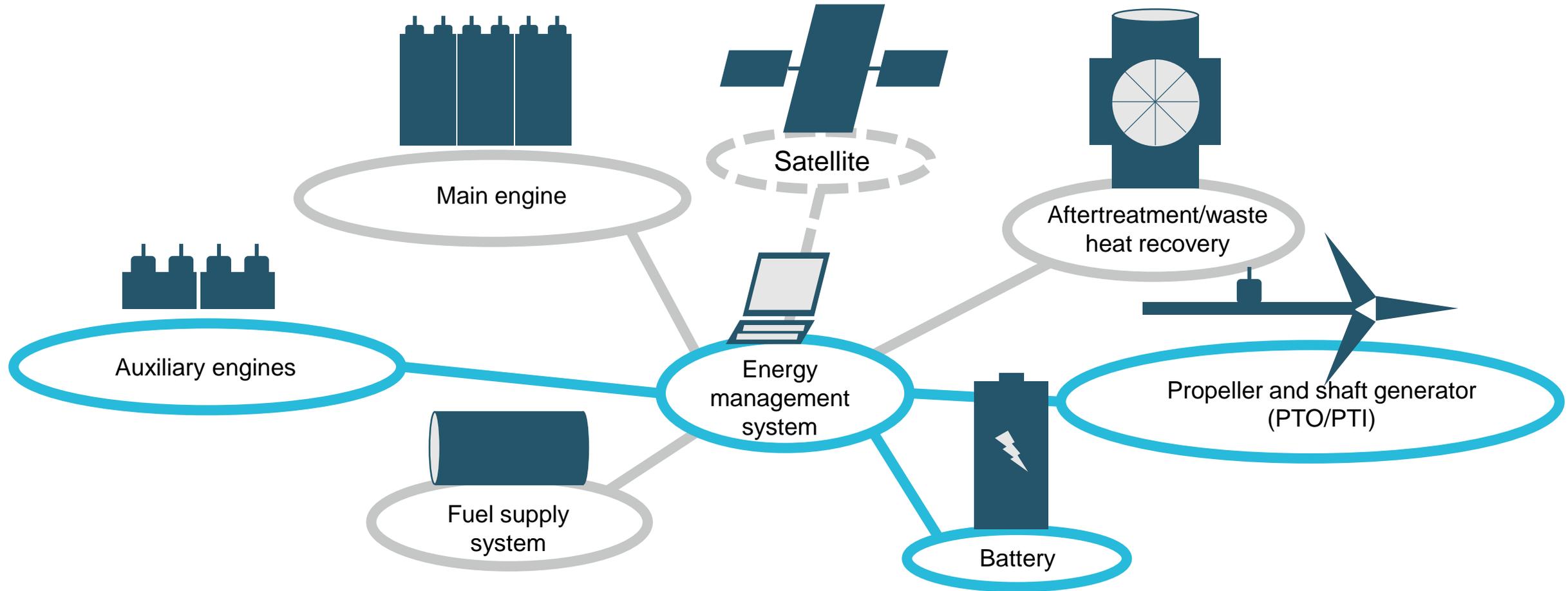
## New Direction

- The future role as a supplier of complete system solutions is represented by "Solutions" as part of the company name.
- The intention of aligning the product range more closely with the mega trend of decarbonisation is represented by emphasising "Energy" as a performance feature that connects the entire portfolio
- MAN Energy Solutions enables its customers to achieve sustainable value creation in the transition towards a carbon neutral future.
- Addressing tomorrow's challenges within the marine, energy and industrial sectors, we improve efficiency and performance at a systemic level.

Future  
in the  
making

# We develop innovative integrated solutions

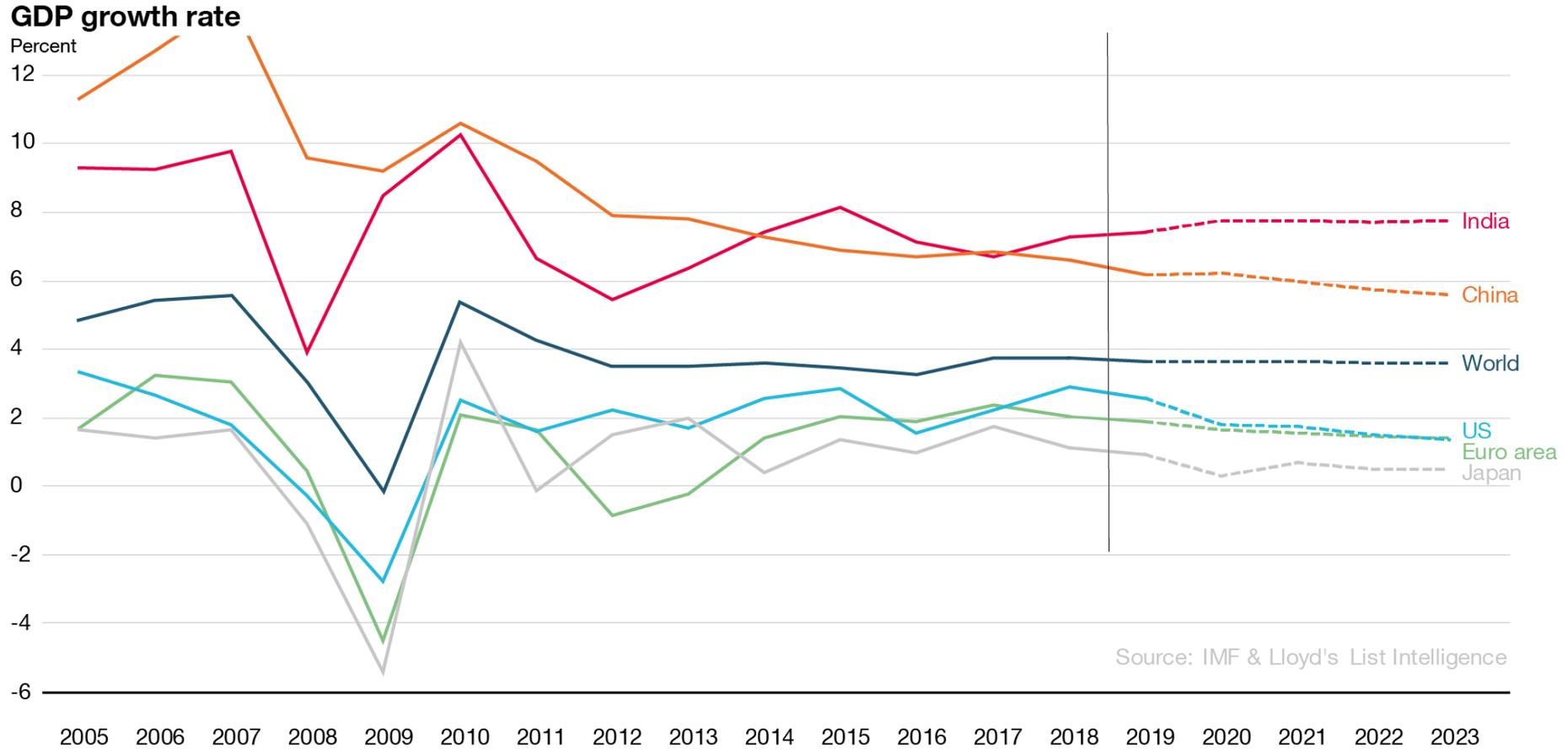
Electrical energy solutions towards 2030



# 2 Market forecast

# Stable fundamentals – global GDP

Global GDP will continue to grow



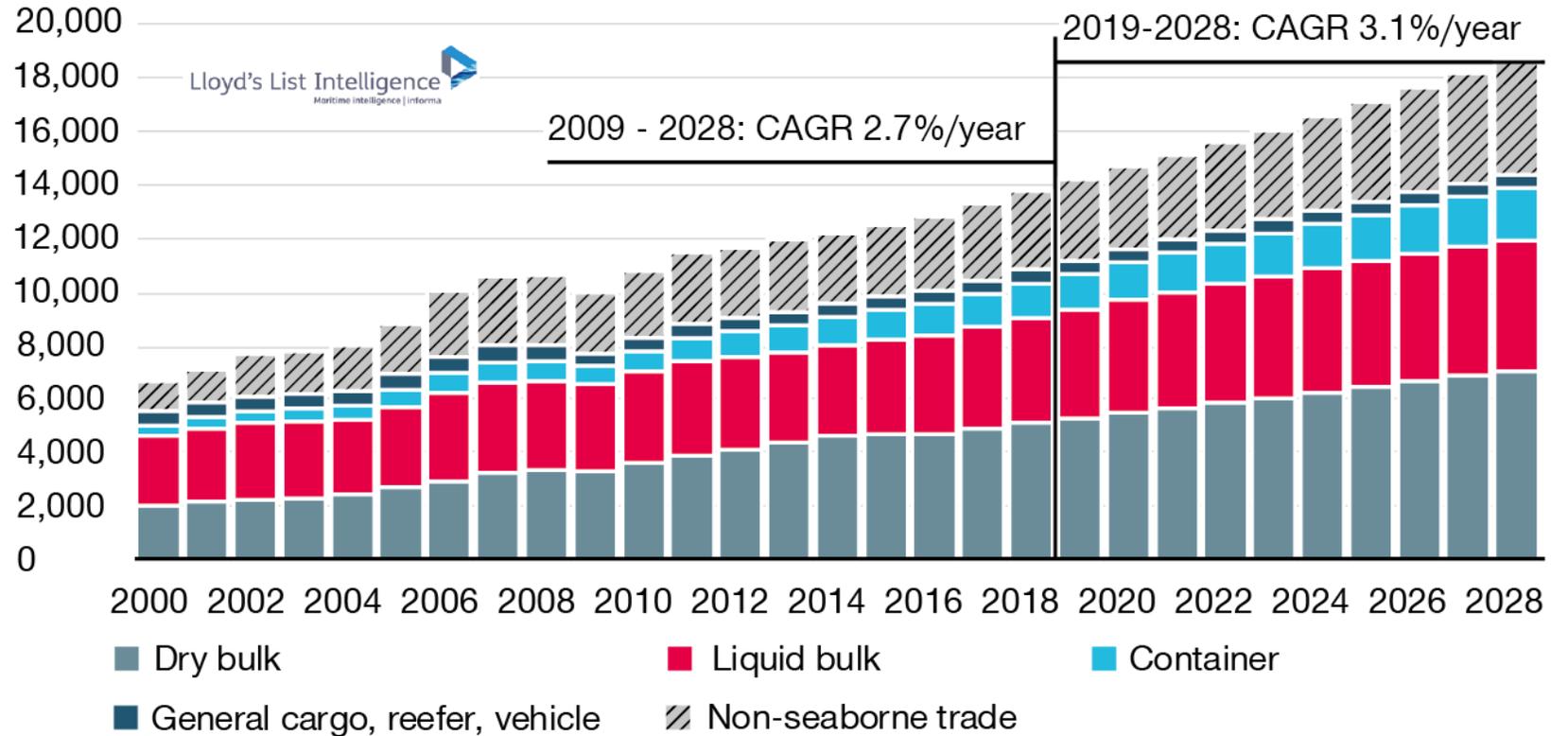
# Global trade will also continue to grow

Global seaborne trade will grow 33% within next 10 years

78% of all goods transported is seaborne

## Trade

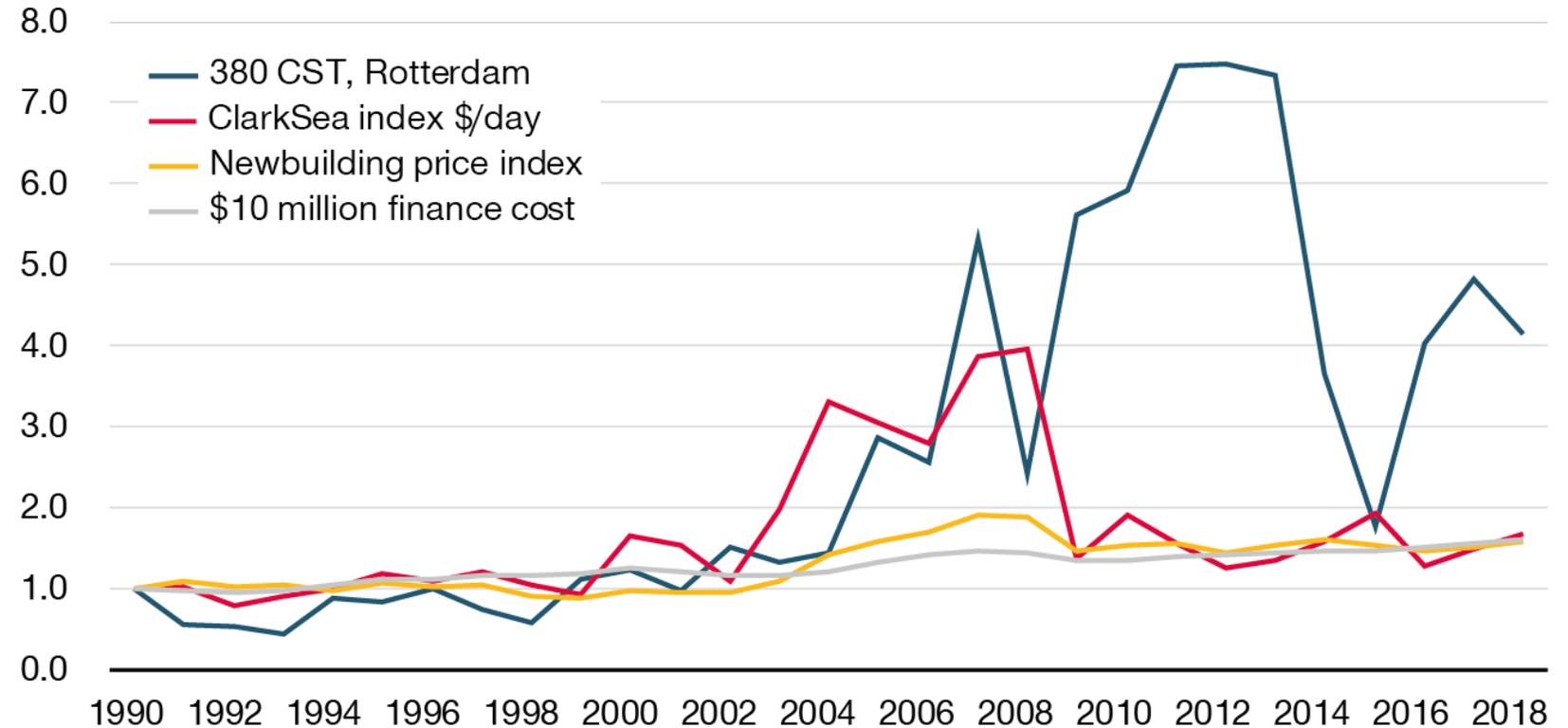
Million tonnes



# Are we returning to earlier levels?

## State of the shipping market

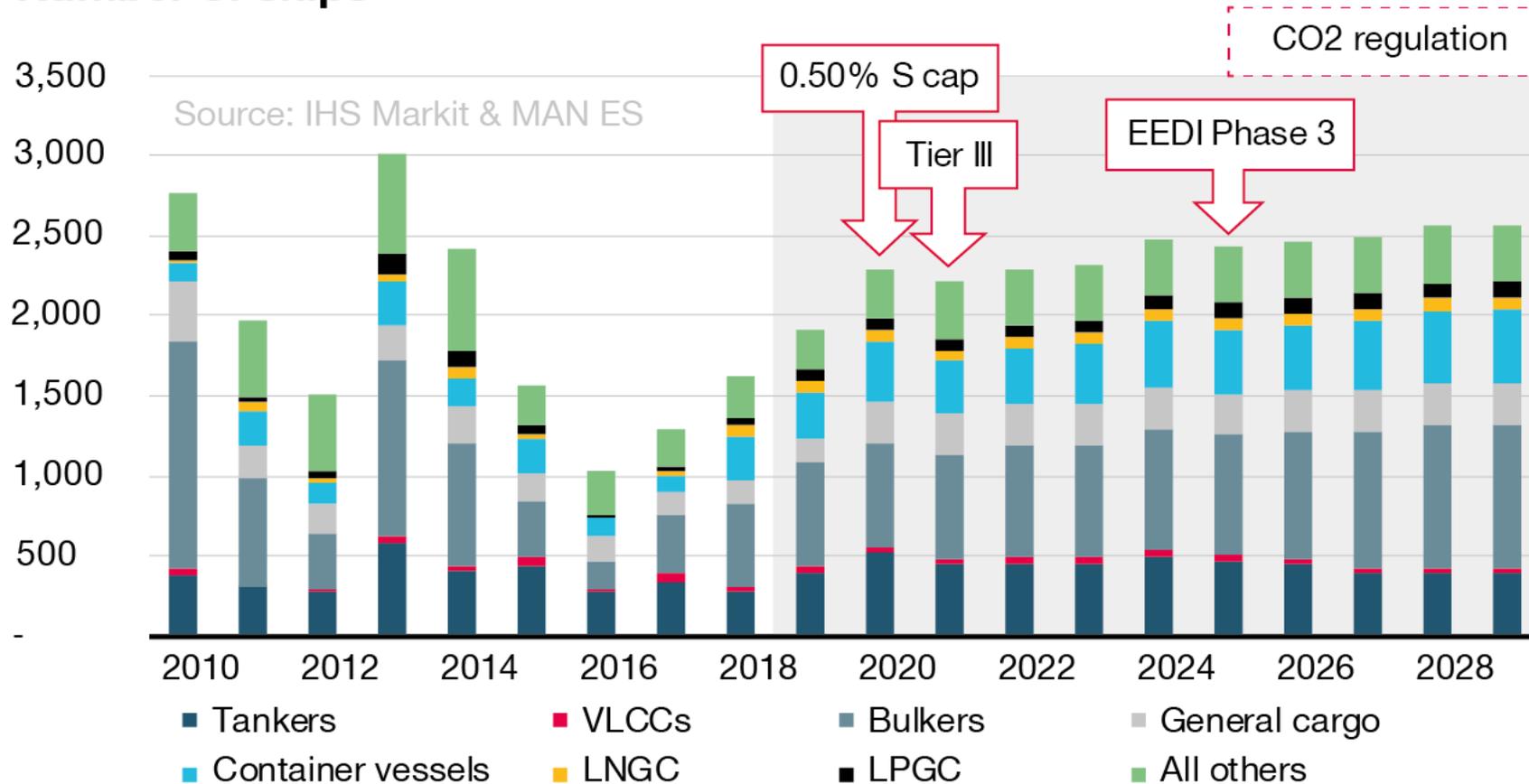
- Overcapacity will continue for years to come
- Costs have been decoupled from earnings and competitive pressure is high
- Cost and efficiency are key to progress



# Our forecast indicates a slow recovery

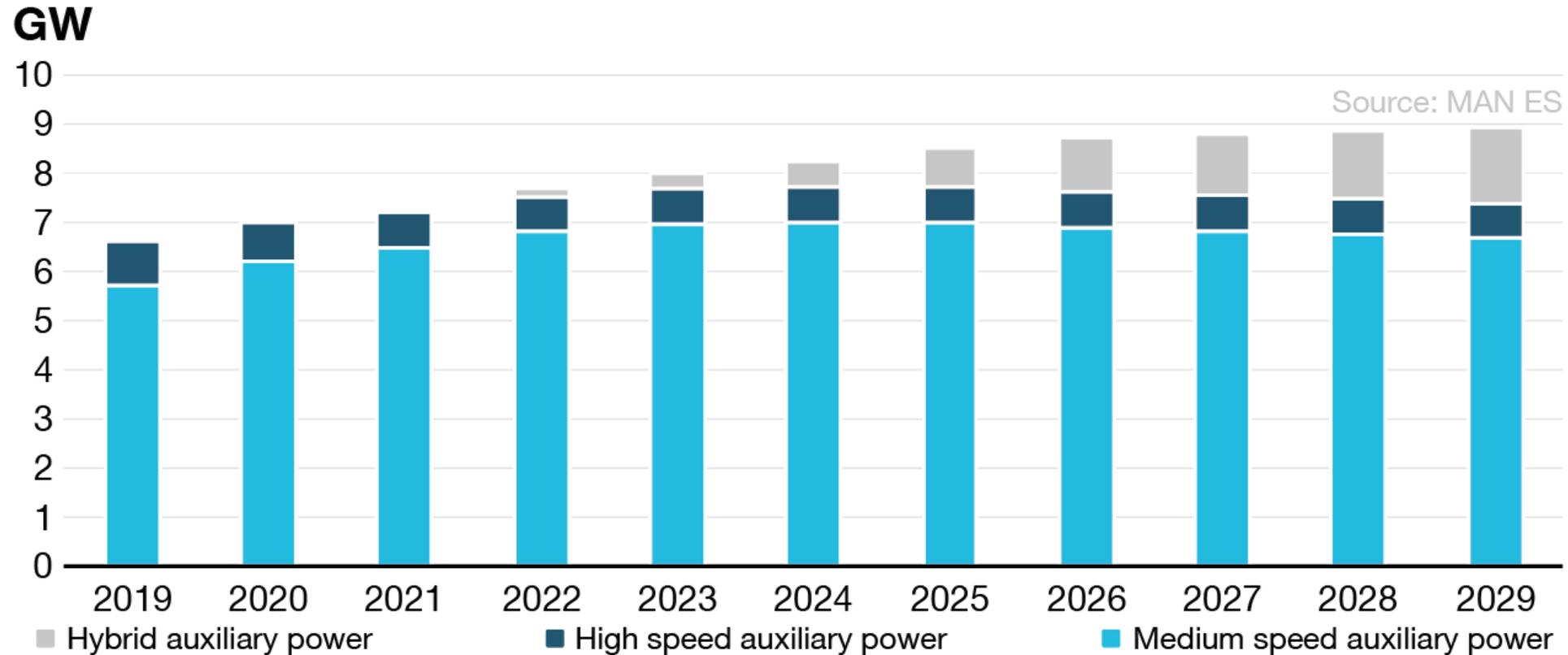
Legislation will impact the pace of recovery

## Number of ships



# Will the auxiliary market change?

Auxiliary market will gradually change towards more holistically optimised systems

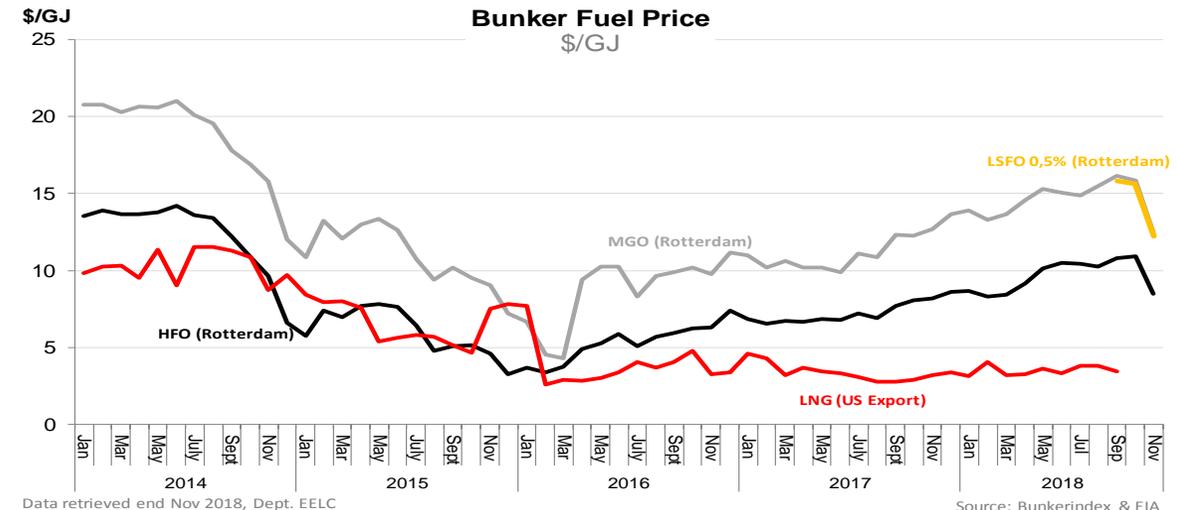


# Long term challenges

## Small bore four-stroke GenSets

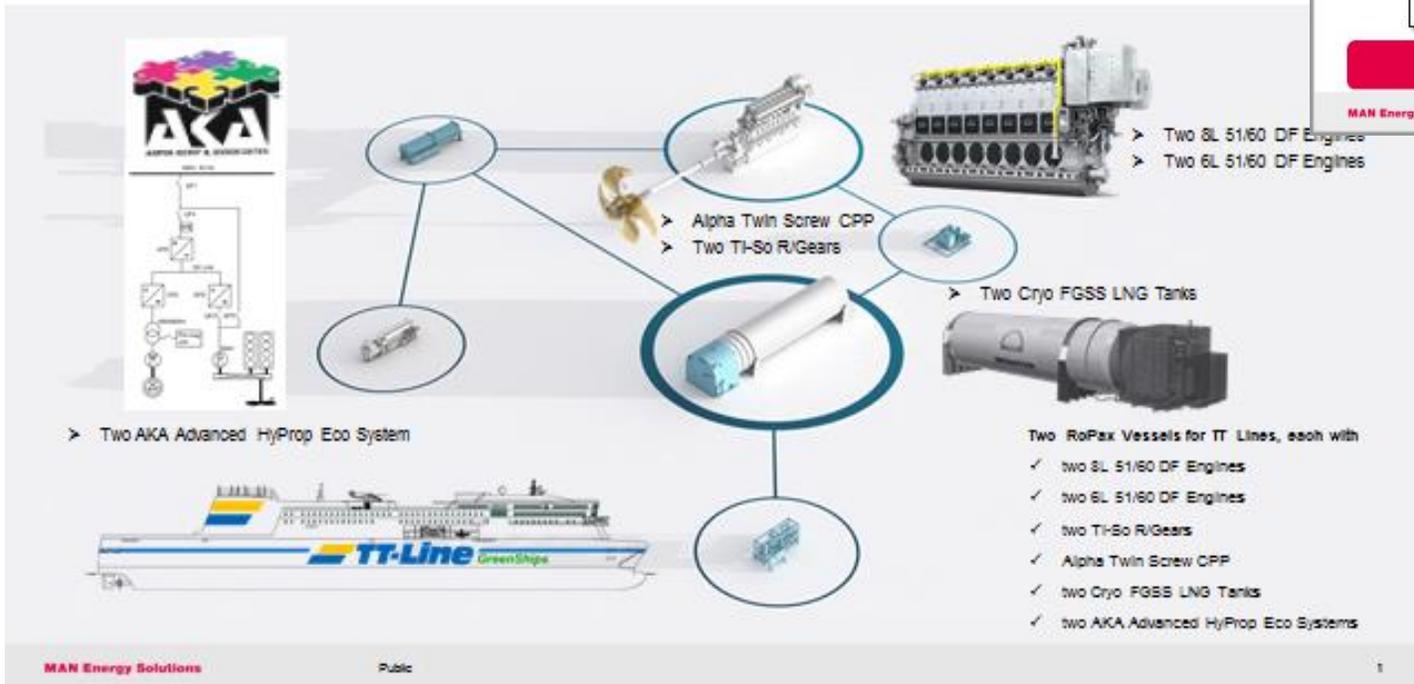
### Challenges in 2020 +:

- **Alternative energy sources on commercial vessels**
  - Hybrid power pack
  - PTO Shaft alternators
  - MDO GenSets (high speed)
  - LNG/LPG/Methanol/Ethan etc.
- **Spare parts and service competition from competitors and “pirates”**
- **Own designed Gensets CSSC (Wärtsila), HHI (Himsen)**
- **Fuel prices and alternative fuels**
- **MAN ES focuses on others than Holeby’s “core” business**
- **GenSet prices**



# MAN Energy Systems Package orders - Example

## AKA / MAN Four-Stroke Marine Business – TT Lines



### Approvals & certificates

#### L23/30DF IMO Tier III Certificate



#### 28/32DF Type Approval Certificate



Type approval and IMO Tier III certificate is achieved – now aiming for optimisations

### MAN to supply dual-fuel propulsion for Baltic RoPax

27. May 2019

MAN Energy Solutions is to provide four MAN 51/60DF engines for one, option one, 230m-long RoPax vessels for German ferry operator, TT-Line, being built at Jinling Shipyard in China. The vessels, based on the Travemünde ferry company's 'Green Ship' design developed together with OSK-Shiptech of Copenhagen, will incorporate a complete propulsion package from MAN including engines, propellers, a fuel-gas supply system and HyProp ECO, the company's hybrid propulsion system.

The first RoPax, with capacity for 800 passengers and more than 200 articulated lorries, is due for delivery in 2022 when it is expected to be deployed in TT-Line's Baltic Sea network. The ferry is expected to cut emissions by 50% compared with the company's previous generation of vessels, MAN said.

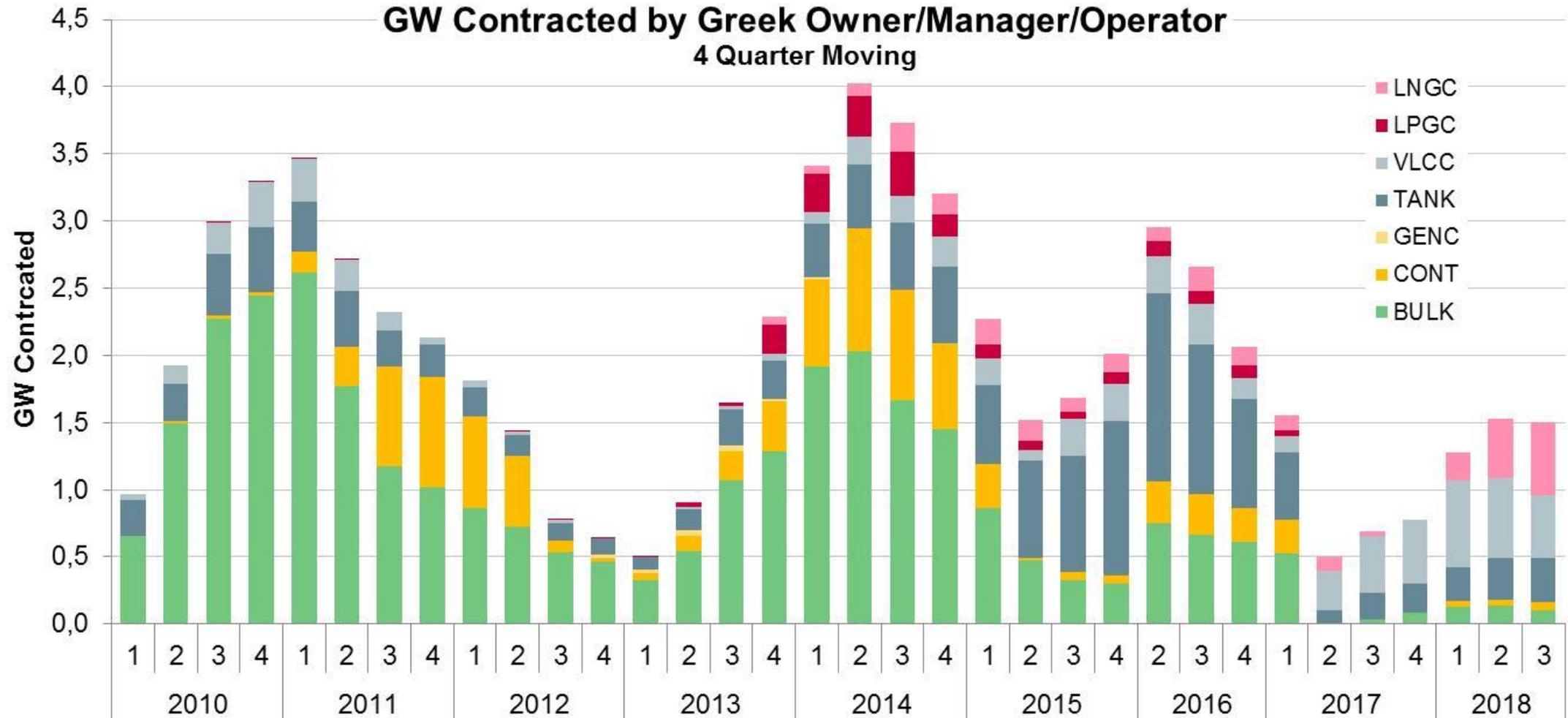
The company's head of Four-Stroke Marine Sales, Lex Nijsen, said: "Running on LNG, our propulsion package will enable this vessel to operate on such low emissions that it will become the most environmentally friendly RoPax ferry in the Baltic. The order is the very first MAN dual-fuel, diesel-mechanical propulsion system for a ferry application, which reflects our strategic direction of developing sustainable technologies and solutions."

The components will be supplied in association with Aspin Kemp & Associates, a specialist in power supply, energy management and drive systems, in which MAN has a 40% stake. MAN Cryo, the company's fuel-gas specialist division, will supply the fuel-gas supply system.

# **3 Market in Greece - Survey on GenSets**

# Focus: Greek Market – Vessel Types

Ships larger than 2,000 DWT/GT

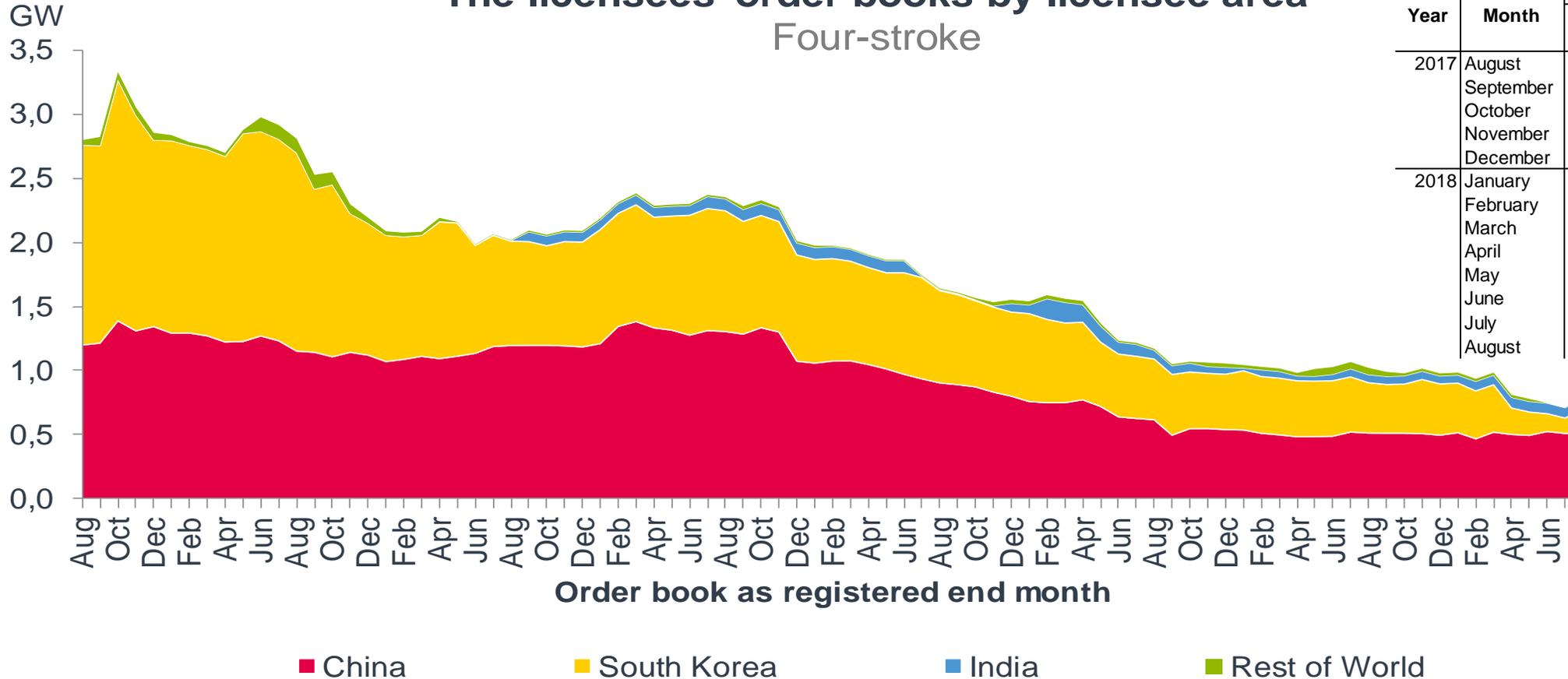


Source: IHS Markit & FMS, MAN-ES - End Aug 2018

# The Licensees Reported Order Book

Small Bore Four-Stroke

The licensees' order books by licensee area  
Four-stroke



Total 4-stroke order book as registered in August 2018: 0,79 GW

Status Reported end August 2018

Source: Licensees order book

MW on order end month  
Four-stroke

Year	Month	Licensee Country				Total
		South Korea	China	India	Rest of World	
2017	August	392	512	63	53	1.020
	September	380	512	63	35	989
	October	382	512	65	19	978
	November	422	508	65	19	1.014
	December	400	496	63	19	977
2018	January	387	515	63	19	984
	February	373	468	75	19	935
	March	370	519	75	19	983
	April	206	502	83	19	810
	May	182	495	83	19	779
	June	139	524	83	-	746
	July	120	510	81	-	711
	August	188	513	86	-	787

# Holeby Gensets – Assessment of Greek market

## Survey

- Survey done during Technical Seminar "The sustainable Future" at MAN-ES Hellas
- Electronic Survey tool enabled the audience to access the survey via smart phone
- A line of 24 questions were distributed over the following 3 categories:
  - 1 - 10: Company- and personal data
  - 11 - 15: Personal opinion / preference
  - 16 - 24: Company priority
- 53 respondents completed the survey successfully

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MAN

2 October  
2018

# Survey on GenSets

Chance to win 2 free seats at PrimeServ Academy  
Piraeus course

Scan QR CODE:

Winners informed by email on Friday 5/10/2018

The graphic is a promotional poster for a survey. It features the MAN Energy Solutions logo at the top left and the MAN logo at the top right. The date '2 October 2018' is displayed in the top right corner. The main title 'Survey on GenSets' is prominently displayed in the center. Below the title, it offers a 'Chance to win 2 free seats at PrimeServ Academy Piraeus course'. A QR code is provided for scanning, with the text 'Scan QR CODE:' next to it. At the bottom, it states 'Winners informed by email on Friday 5/10/2018'.

<https://www.surveygizmo.com/team-enterprise/>



# MAN-ES Holeby Genset Campaign

L23/30H Mk3 – One size fits <sup>almost</sup> all

Specific genset campaign for Greece....



Up to  
1,800 kW

New

## MAN L23/30H Mk3

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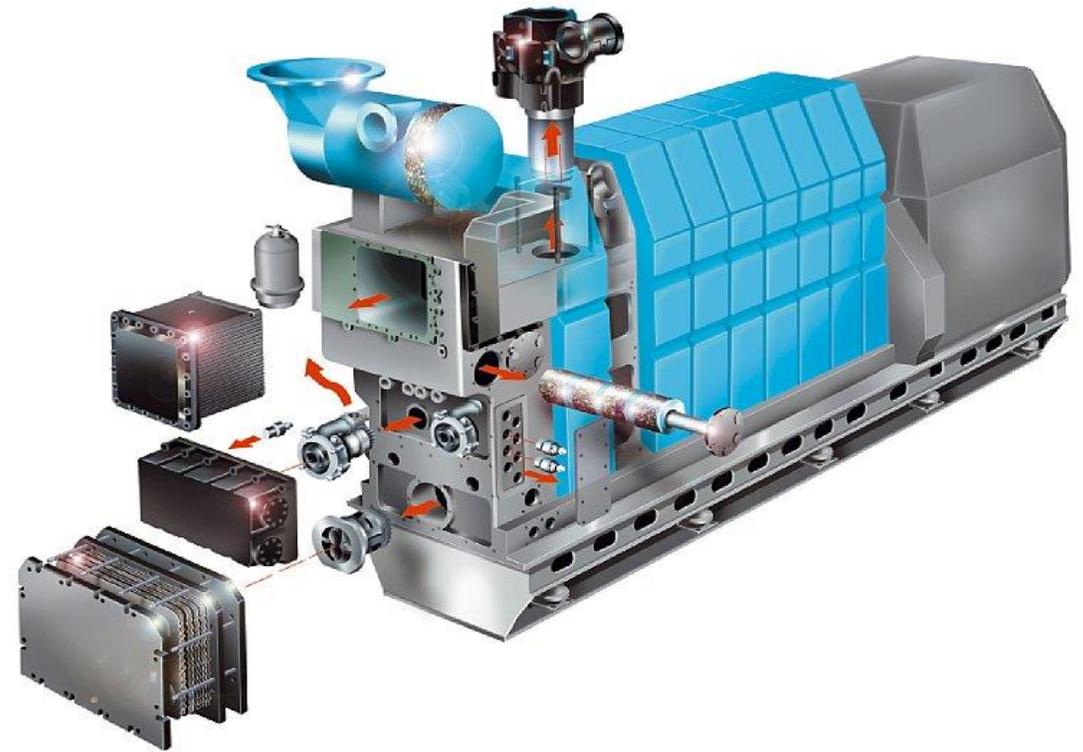


....schedule June 2019

\* Space for Footnotes in Arial Regular 7 pt

# Disclaimer

All data provided in this document is non-binding. This data serves informational purposes only and is especially not guaranteed in any way. Depending on the subsequent specific individual projects, the relevant data may be subject to changes and will be assessed and determined individually for each project. This will depend on the particular characteristics of each individual project, especially specific site and operational conditions.



# Thank you very much !

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June 2019